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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,226	09/13/2000	Bruce A. Fairman	50N3529.01/1433	7779

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EXAMINER

LEZAK, ARRIENNE M

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/661,226

Applicant(s)

FAIRMAN ET AL.

Examiner

Arrienne M. Lezak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10 August 2005 has been entered.

Examiner notes that Claims 1, 21 & 43 have been amended, and no Claims have been cancelled or added. Examiner notes that the new set of claims are clearly and obviously based on the prior set of claims and as such notes that substantive claim language and arguments not explicitly addressed herein are found to be addressed within prior Office Action dated 15 June 2005.

Claim Rejections - 35 USC § 102

1. In light of Applicant's amendments to the claim language, Examiner finds that the rejection of Claims 43 & 44 under 35 USC § 102 are overcome and hereby withdrawn.

Claim Rejections - 35 USC § 103

2. In light of Applicant's amendments to the claim language, Examiner finds that the rejection of Claims 43 & 44 under 35 USC § 103 are overcome and hereby withdrawn.

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as applied to the combined teachings of US Patent 5,349,687 to Ehlig and US Patent 6,029,242 to Sidman alone and in combination with US Patent 5,815,678 to Hoffman.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,613,114 to Anderson in view of U.S. Patent Number US 6,519,265 B1 to Liu in further view of US Patent US 6,732,235 B1 to Krivacek.

5. Regarding Claims 1, 21, 43 & 44, Anderson discloses a system for performing a concurrent context switching procedure (Col. 1, lines 8-10), comprising:

- a main context configured to support system execution tasks, (Custom Context Switching Thread Management), (Figure 1);
- a first concurrent context (first thread – register 1) that supports first concurrent procedures, (Figure 1; Col. 1, lines 23-43 & Col. 2, lines 22-37);
- a second concurrent context (second thread – register 2) that supports second concurrent procedures (Figure 1, Col. 1, lines 23-43 & Col. 2, lines 22-37).

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6. Though Anderson clearly suggests a reason to modify the system for performing a concurrent context switching procedure with other features, (Anderson – Col. 11, lines 42-57), Anderson does not expressly teach a main context that is configured to support system execution tasks, and a context control module that controls switching procedures between main context and other concurrent contexts.

7. Liu disclosed a system for performing a concurrent context switching procedure comprising a main context that is configured to support system execution tasks, (Liu – Col. 2, lines 13-32 & Col. 3, lines 30-47), and a context control module that controls switching procedures between main context and other concurrent contexts, (Col. 6, lines 30-39 & Col. 9, lines 14-35). Liu additionally teaches isochronous process support for handling time sensitive isochronous information (Liu – Col. 4, lines 56-67). It would have been obvious to one of ordinary skill in the art at the time of the invention by Applicant to modify the system of Anderson with the teachings of Liu, (as noted within Liu), to include the main context feature in order to synchronize system execution tasks with other concurrent contexts, (Liu – Col. 4, lines 15-18).

8. Though Anderson clearly suggests modification of the combined context switching system of Anderson and Liu with additional features such as the simultaneous preload feature (Anderson – Col. 11, lines 42-57), the combined teachings of Anderson and Liu do not expressly teach a system having a processor that sequentially executes current processes while said context control module simultaneously preloads isochronous context data needed for executing subsequent processes.

9. Krivacek discloses a context processing system having a processor that sequentially executes current processes while said context control module simultaneously preloads context data needed for executing subsequent processes, (Krivacek - Col. 8, lines 28-39 & Col. 9, lines 47-59). Further, as noted herein Liu clearly teaches isochronous process support for handling time sensitive isochronous information, (Liu – Col. 4, lines 56-67). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the context switching system of Anderson and Liu with the teachings of Krivacek to include having a processor that sequentially executes current processes while said context control module simultaneously preloads isochronous context data needed for executing subsequent processes in order to ensure continuous execution to a computer (Anderson – Col. 1, lines 16-21). Thus, Claims 1, 21, 43 & 44 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

10. Regarding Claims 2 & 22, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said first concurrent context and said second concurrent context support isochronous processes for handling time sensitive isochronous information, (Liu – Col. 4, lines 56-67). Thus, Claims 2 & 22 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

11. Regarding Claims 3 & 23, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said concurrent context switching procedure occurs in one of a computer device, a set top box, an

electronic network device, and a consumer electronic device, (Liu – Col. 1, lines 23-37 & Col. 3, lines 56-62). Thus, Claims 3 & 23 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

12. Regarding Claims 4 & 24, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said system for performing said concurrent context switching procedure is pad of an electronic network that is implemented according to an IEEE 1394 serial bus standard, (Liu – Col. 5, lines 1-8). Thus, Claims 4 & 24 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

13. Regarding Claims 5 & 25, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein a control store (picokernel module) manages said context control module to perform said concurrent context switching procedure, (Liu - Figs. 4 & 5; Col. 6, lines 29-38). Thus, Claims 5 & 25 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

14. Regarding Claims 6 & 26, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Anderson further discloses a system wherein said first concurrent procedures include executing a first process in said first concurrent context while concurrently loading a second process into said second concurrent context, and wherein said second concurrent procedures include executing said second process in said second concurrent context while concurrently loading a third process into said first

concurrent context, (Anderson – Col. 5, lines 6-33). Thus, Claims 6 & 26 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

15. Regarding Claims 7 & 27, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Anderson further discloses a system wherein said context control module alternately repeats additional first concurrent procedures and additional second concurrent procedures after executing said first process and said second process to sequentially support additional processes, (Anderson – Col. 1, lines 23-43). Thus, Claims 7 & 27 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

16. Regarding Claims 8 & 28, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said main context includes a main register set, said first concurrent context includes a first concurrent register set, and said second concurrent context includes a second concurrent register set, (Liu - Figure 3 & Col. 4, lines 42-55). Thus, Claims 8 & 28 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

17. Regarding Claims 9 & 29, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said context control module, said main register set, said first concurrent register set, and said second concurrent register set are included in a central processing unit of an electronic device, (Liu - Figure 3; Col. 3, lines 56-62; & Col. 4, lines 42-55). Thus, Claims 9 & 29 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

18. Regarding Claims 10 & 30, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein each of said main register set, said first concurrent register set, and said second concurrent register set includes a series of general purpose registers, a program counter register, and a status register, (Liu – Figs. 3, 5 & 6; Col. 4, lines 42-55). Thus, Claims 10 & 30 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

19. Regarding Claims 11 & 31, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein first information corresponding to a first process is preloaded into said first concurrent register set while said system execution tasks are being executed by using said main register set of said main context, (Liu – Col. 6, lines 30-39 & Col. 9, lines 14-35). Thus, Claims 11 & 31 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

20. Regarding Claims 12 & 32, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said context control module causes a context selector to switch to said first concurrent register set of said first concurrent context in response to an isochronous exception, said isochronous exception being triggered by an isochronous clock signal generated from a network interface to said context control module, (Liu – Col. 3, lines 30-47 & Col. 4, lines 56-67). Thus, Claims 12 & 32 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

21. Regarding Claims 13 & 33, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said first

process is executed in said first concurrent context while said context control module concurrently causes a context DMA device to load second information corresponding to a second process into said second concurrent register set of said second concurrent context, (Liu – Col. 4, lines 42-55; Col. 6, lines 17-28; & Col. 7, lines 4-20). Thus, Claims 13 & 33 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

22. Regarding Claims 14 & 34, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Anderson further discloses a system wherein said context control module causes said context selector to switch to said second concurrent register set of said second concurrent context when said first process has been executed, (Anderson – Col. 5, lines 6-32). Thus, Claims 14 & 34 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

23. Regarding Claims 15 & 35, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said second process is executed in said second concurrent context while said context control module concurrently causes said context DMA device to load third information corresponding to a third process into said first concurrent register set of said first concurrent context, (Liu – Col. 4, lines 42-55; Col. 6, lines 17-28; & Col. 7 lines 4-20). Thus, Claims 15 & 35 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

24. Regarding Claims 16 & 36, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Anderson further discloses a system wherein said

context control module cause: said context selector to switch to said first concurrent register set of said first concurrent context when said second process has been executed, (Anderson – Col. 5, lines 6-32 & Col. 7, lines 27-50). Thus, Claims 16 & 36 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

25. Regarding Claims 17 & 37, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Anderson further discloses a system wherein said third process is executed in said first concurrent context, (Anderson – Col. 5, lines 6-32 & Col. 7, lines 27-50). Thus, Claims 17 & 37 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

26. Regarding Claims 18 & 38, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said context control module causes said context selector to switch to said main register set of said main concurrent context when said third process has been executed, (Liu – Col. 6, lines 30-39 & Col. 9, lines 14-35). Thus, Claims 18 & 38 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

27. Regarding Claims 19 & 39, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Anderson further discloses a system wherein said context control module continues to perform said concurrent context switching procedure by alternating between said first concurrent context to support said first concurrent procedures and said second concurrent context to support said second concurrent procedures, to thereby sequentially support any additional processes,

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(Anderson – Col. 5, lines 6-32 & Col. 7, lines 27-50). Thus, Claims 19 & 39 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

28. Regarding Claims 20 & 40, the combined teaching of Anderson, Liu and Krivacek are relied upon as noted herein. Liu further discloses a system wherein said context control module loads new first information for said first process into said first concurrent register set, said central processing unit then returning from said isochronous exception to perform said system execution tasks until a new isochronous exception retriggers said concurrent context switching procedure, (Liu – Col. 3, lines 30-47 & Col. 4, lines 56-67). Thus, Claims 20 & 40 are found to be unpatentable over the combined teachings of Anderson, Liu and Krivacek.

29. Claims 1, 21, 43 & 44 are also rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,613,114 to Anderson in view of US Patent 5,528,513 to Vaitzblit.

30. Regarding Claims 1, 21, 43 & 44, Anderson discloses a system for performing a concurrent context switching procedure (Col. 1, lines 8-10), comprising:

- a main context configured to support system execution tasks, (Custom Context Switching Thread Management), (Figure 1);
- a first concurrent context (first thread – register 1) that supports first concurrent procedures, (Figure 1; Col. 1, lines 23-43 & Col. 2, lines 22-37);

- a second concurrent context (second thread – register 2) that supports second concurrent procedures (Figure 1, Col. 1, lines 23-43 & Col. 2, lines 22-37).

31. Though Anderson clearly suggests a reason to modify the system for performing a concurrent context switching procedure with other features, (Anderson – Col. 11, lines 42-57), Anderson does not expressly teach a main context that is configured to support system execution tasks, a context control module that controls switching procedures between main context and other concurrent contexts, and a processor that sequentially executes current processes while said context control module simultaneously preloads isochronous context data needed for executing subsequent processes

32. Vaitzblit discloses a context control module that controls switching procedures between said main context, said first concurrent context, and said second concurrent context, (Vaitzblit - Fig. 2; Col. 1, lines 7-67; Col. 2, lines 1-34; Col. 3, lines 15-67; Cols. 4-5; & Col. 6, lines 1-56); and a processor that sequentially executes current processes while said context control module simultaneously preloads isochronous context data needed for executing subsequent processes, (Vaitzblit - Fig. 2; Col. 1, lines 7-67; Col. 2, lines 1-34; Col. 3, lines 15-67; Cols. 4-5; & Col. 6, lines 1-56). It would have been obvious to combine the teachings of Anderson and Vaitzblit as noted within Vaitzblit, which teaches a switching technology scheduling mechanism, (Vaitzblit – Col. 1, lines 5-17), and insertion of isochronous tasks into the ready queue upon arrival at the server, (Col. 4, lines 31-67), wherein preloading of the isochronous context data would obviously serve to accommodate traffic with diverse performance requirements,

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(Vaitzblit - Col. 2, lines 10-15). Thus, Claims 1, 21, 43 & 44 are found to be unpatentable over the combined teachings of Anderson and Vaitzblit.

Response to Arguments

33. Applicant's arguments filed 10 August 2005, have been fully considered but they are not persuasive. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made.

34. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Examiner notes that the combined teachings of Anderson, Liu and Krivacek clearly and obviously teach each and every claim element as noted herein above.

35. Regarding Applicant's argument that "context data" is "program instructions", Examiner respectfully disagrees noting Applicant's specification wherein Applicant specifically defines a "context" to comprise "an execution environment that includes any resources that are required to support a given task or process", (Applicant spec. – p.10, lines 13-17), and wherein program instructions are clearly a resource required to support a given task or process.

36. Regarding Applicant's argument that "nowhere in the entire Office Action (dated 15 June 2005) does the Examiner relate the purported teachings of Krivacek to any specific claims", Examiner respectfully disagrees noting paragraphs 54 & 55, which are clearly part of the rejection of Claim 1, (as noted within paragraph 47). Examiner notes that paragraph 46 inadvertently fails to mention the Krivacek; however, use of the Krivacek reference by name, (in paragraphs 54 & 55, as noted by Applicant), and mention of the same on the PTO-892 form clearly provided Applicant with notice of and reference to the same.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arrienne M. Lezak whose telephone number is (571)-272-3916. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571)-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Arrienne M. Lezak
Examiner
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AML

A handwritten signature in black ink, appearing to read 'B. J. Lezak', with a horizontal line extending from the end of the signature.

BUNJOB JAROENCHONWANIT
SUPERVISORY PATENT EXAMINER